

- [0234] 32 Battery
- [0235] 33 Spectacle lens
- [0236] 34 Spectacle arm
- [0237] 35 HMD
- [0238] 36 External computer unit
- [0239] 37 GUI
- [0240] 38 First button
- [0241] 39 Second button

1. A method of representing a virtual interaction on at least one screen (1) by means of a computer unit (2), comprising at least the following steps:

- representation of a virtual surface (3) on at least one screen (1);
- representation of a position of a pointer by means of a defined deformation (4) of the virtual surface (3) if the pointer is located on the virtual surface (3);
- displacement of the defined deformation (4) upon a corresponding displacement of the pointer while the previously defined deformation (4) is cancelled, in which the at least one pointer is generated by means of an input device (12) for a virtual application by means of a computer unit (2), wherein the input device (12) comprises at least the following components:
  - a fastening device (13) for fastening to a hand (14);
  - a recording device (15) for creating recording data of the relative position of at least one finger (7, 8, 10, 11) of a hand (14) with respect to the input device (12) and/or with respect to at least one further component of the hand and/or with respect to a real surface, if the activated input device (12) is fastened to the hand by means of the fastening device (13);
  - an internal computer unit (2) for processing the recording data;
  - a transmitter unit (16) for sending the processed recording data of the computer unit (2), wherein by means of said recording data at least one corresponding virtual interaction can be generated by means of the internal and/or an external computer unit (2).

2. A method of representing a virtual interaction on at least one screen (1) by means of a computer unit (2), comprising at least the following steps:

- representation of a virtual surface (3) on at least one screen (1), wherein the virtual surface (3) comprises a coordinate system with an x-axis and a y-axis in the virtual surface and a z-axis pointing out of the virtual surface;
- representation of a position of a pointer by means of a defined deformation (4) of the virtual surface (3), if the pointer is located on the virtual surface (3), wherein this defined deformation comprises a two-dimensional extent in the x-direction and in the y-direction and an extent in the z-direction;
- displacement of the defined deformation (4) in the x-direction and/or y-direction upon a corresponding displacement of the pointer in the x-direction and/or y-direction while the previously defined deformation is cancelled.

3. A method of representing a virtual interaction on at least one screen (1) by means of a computer unit (2), comprising at least the following steps:

- representation of a virtual surface (3) on at least one screen (1);
- representation of a position of a pointer by means of a defined deformation (4) of the virtual surface (3) if the

pointer is located on the virtual surface, wherein this defined deformation (4) is only used to indicate the position of the pointer;

displacement of the defined deformation (4) upon a corresponding displacement of the pointer while the previously defined deformation (4) is cancelled.

4. The method according to claim 1, wherein the defined deformation is made by means of at least one finger.

5. The method according to claim 1, wherein a plurality of fingers respectively generates a defined deformation, and wherein by means of the plurality of fingers at least one virtual object can be grasped.

6. The method according to claim 1, wherein a plurality of virtual surfaces (3) is provided that form at least one virtual object (6), wherein a plurality of pointers is provided that are displayed respectively by a defined deformation (4), wherein upon a corresponding change of at least one of the defined deformations (4), the virtual object (6) can be manipulated.

7. The method according to claim 1, wherein a distance limit of the pointer to at least one surface (3) is defined, wherein if the distance limit is undercut, the defined deformation (4) is changed and when the pointer is displaced a virtual kinetic action on the surface is possible, and wherein when the distance limit is exceeded the virtual surface (3) rests and a displacement of the pointer leads to a displacement of the defined deformation (4) relative to the virtual surface (3).

8. An input device for a virtual application by means of a computer unit (2), which input device is designed as a ring, wherein the ring comprises at least the following components:

- a fastening device (13) for fastening the ring to a finger with an accurate fit;
- a recording unit (15) for generating recording data of the relative position of at least one finger (7, 8, 10, 11) of a hand (14) with respect to the input device (12) and/or with respect to at least one further component of the hand (14) and/or with respect to a real surface, if the activated input device (12) is fastened to the finger (9) by means of the fastening device (13);
- an internal computer unit (2) for processing the recording data;
- a transmitter unit (16) for sending the processed recording data of the computer unit (2), wherein by means of said recording data at least one corresponding virtual interaction can be generated by means of the internal and/or an external computer unit (2).

9. The input device (12) according to claim 8, wherein the recording unit (15) is at least one camera (17, 18) with a pre-defined field of view (28), wherein by means of the field of view (28) at least one finger (7, 8, 9, 10, 11) of the hand (14) can be detected, and wherein the at least one camera (17, 18) is configured to record images of natural surfaces, preferably by means of a wide angle objective.

10. The input device (12) according to claim 8, wherein the input device (12) further comprises at least one accelerometer and/or a gyroscope, by means of which spatial changes of position of the input device (12) can be detected.

11. A system (27) for representation and for interaction with a virtual surface (3), which comprises at least one of the following components: